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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,471	08/24/2000	Masaya Yukinobu	000996	4323
38834	7590	04/29/2004		
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			EXAMINER KRUER, KEVIN R	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 04/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/645,471

Applicant(s)

YUKINOBU ET AL.

Examiner

Kevin R Krueer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 13-20 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 15, 2004 has been entered.

Election/Restrictions

2. Claims 1-12 and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 09/04/2002.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. The drawings filed August 24, 2000 are acceptable.

Specification

5. The title does not comply with 37 CFR 1.72. Specifically, the title is too long.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

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requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 19, 22, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims add additional components to a composition "consisting of" enumerated elements. A claim which depends from a claim that "consists of" the recited elements or steps cannot add an element or step (see MPEP 2111.03).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 13-15 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Engle et al (US 5,888,290). Engle teaches a composition that is made by combining a hydrosol, mixed sol, or and organosol with a coupling agent and allowing them to react (col 4, lines 17+). Preferably, the sol comprises colloidal silica (col 2, line 25) that may further comprise alumina sol, zinconia sol, or titania sol (col 2, lines 20+). The coupling agent may comprise any of a variety of mercaptosilanes (col 3, lines 66+).

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For example, Engle teaches an isopropanol solution consisting of a colloidal silica and mercaptopropyltrimethoxysilane (see Example 42). The solid content of the suspension is 29%.

Herein, the silica is understood to read on the inorganic binder of claim 13 and the mercaptosilanes are understood to read on the "functional group containing compound" of claims 13 and 15.

The examiner notes that the limitation "for forming a transparent coating layer" is an intended use limitation that does not further limit the claim.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 16-20 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP11-203943 (herein referred to as "Yukinobu") in view of WO99-01766 (herein referred to as Buining) and JP 09-286936 (herein referred to as "Tofuku").

Yukinobu teaches gold-coated silver particles with a mean particle diameter of 1-100nm distributed in a solvent (claim 7). The particles comprise 5-100 parts by weight of gold per 100 parts by weight of silver (claim 2). The solution may further comprise silica sol as a binder (claims 11 and 12). The solutions are useful for producing transparent conductive materials for front plates of displays (paragraph 0001).

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Yukinobu does not teach that the composition should comprise a functional group compound having at least one functional group selected from mercapto- groups, sulfide groups, and polysulfide groups. However, Buining teaches a solution comprising metal particles and a mercaptosilane residue bound to said metal particles (abstract). The metal particle has a particle size of 5nm or lower and comprise gold or silver (abstract). The mercaptosilane stabilizes the metal particle in a manner that resembles the role of the surfactant (page 12, lines 17+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the mercaptosilane to the solution taught in Yukinobu. The motivation for doing so would have been to stabilize the metal particles in solution.

Yukinobu also does not teach the claimed concentration of metal particles. However, Tofuku teaches a solution for forming transparent conductive films on displays wherein the solution comprises metal particles having a grain size of less than 50nm and a polar solvent (abstract). Tofuku teaches that the metal particles should be in a concentration of between 0.1%-10wt% (paragraph 0022). If the concentration is greater than 10wt%, stability of the coating composition is degraded. If the concentration is less than 0.1wt%, the conductivity is degraded. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the metal particle concentration of the solution taught in Yukinobu. The motivation for doing so would have been to improve the solution's stability and obtain the desired conductivity.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K-RK-

Kevin R. Kruer
Patent Examiner